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with compliment of
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CLINICAL CONTRIBUTIONS TO OPHTHALMOLOGY.

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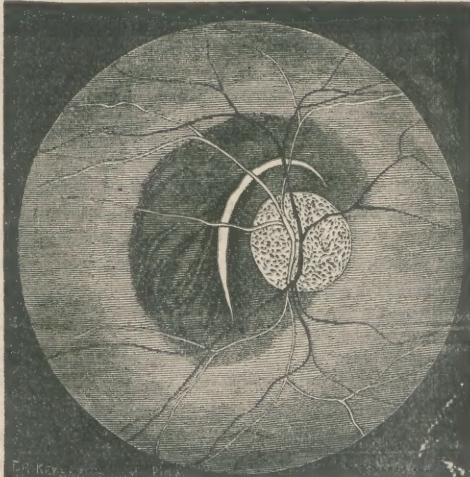
Perforating Wound of the Sclerota, Partial Detachment of the Iris from its Ciliary Border, and Rupture of the Choroid.
Recovery of good Vision.

On the 9th of September, 1873, a boy threw quite a large piece of hard mortar at David C., aged 15 years, of Wilmington, Del., striking him on the left eye, knocking him down senseless for a short time. He was carried home to his bed, where he lay for two days, unable to raise his head in the least without retching and vomiting taking place. The lids of the eye became immediately so swollen that they could not be opened for five days after the injury, so that no examination of the condition of the eye was made. The lids were not in the least injured from the blow. Cold water cloths were continually laid over the eye until the swelling was all gone, when he was sent to me, nine days after the injury, in the following condition:—

Lids free from any swelling, open well and freely; ocular conjunctiva somewhat injected, particularly peri-corneal. About 3 to 4 m.m. inside of the edge of the cornea there is a vertical incision in the sclera, of 3 to 4 m.m., which is in fine process of healing. The upper part of the iris is torn away from its ciliary attachment and falls a little down, causing the top of the pupil to be straight instead of arched. The anterior chamber and pupil are perfectly clear; all hemorrhage which must have been there was entirely absorbed. Vision $\frac{1}{2}$. No pain either in the eye or over the brow. Ophthal-

moscopic examination shows quite a peculiar and extended rupture of the choroid. A yellowish white band is seen starting out just above the optic disc, rising in a curve forming an arch across the top of the disc, then falling down in a curve to a little distance below the lower edge of the papilla, along the line of which the edges of the ruptured choroid can be plainly distinguished. For some distance around the rupture there is a choroidal hemorrhage which can be well mapped out.

See accompanying figure.



The retina is in proper position, the vessels running over the ruptured choroid in their normal condition. There is no effusion into the

vitreous. The artificial leech was applied to the temple, the cold water applications over the eye still continued, and iodide of potassium given internally.

October 9th. The wound in the sclera is completely healed; the ocular conjunctiva has the normal healthy appearance. The hemorrhage around the rupture in the choroid much lighter in color and reduced in size. The ruptured edges sharp and well defined. Vision improved to $\frac{20}{60}$ and reads No. 13 Jäger's test types.

November 10th. Choroid has still a more normal appearance. Vision increased to $\frac{20}{15}$ and reads No. 5 Jäger's types.

December 15th. Choroidal hemorrhage all absorbed. Vision still improving $\frac{20}{15}$ reads No. 4 Jäger's types. Was now allowed to return to school.

Phosphatic Degeneration of the Cornea.

D. M., aged fifty-three years, came to my clinic at the Wills' Eye Hospital, February 25th, 1873, complaining that with the left eye "he could not stand the light, move the ball, nor open the lids, without a great scratching pain." On opening the lids to examine the eye no inflammation of the conjunctiva of either the lids or bulb, nor peri-corneal injection, was present, but a translucent infiltration was seen running in a horizontal line across the centre of the cornea, from the inner to the outer edge, and completely covering the pupil. The opacity was of cone shape, with the base at the inner edge and apex at the outer one. On the upper edge or line, immediately over the upper border of the pupil, there was a point slightly raised and of a shining crystalline appearance. There is an utter impossibility to open the lids without pain from the light, and a feeling as if a foreign body was in the eye.

The history given was that the vision had been getting dim for some time back, but had had the photophobia only a few weeks previously to his presenting himself at my clinic. He has suffered much from rheumatism in the hips and back at times, otherwise healthy. Had been infected with syphilis some twelve or fifteen years ago.

To remove the scratching feeling, I lifted the crystalline point off with a needle, which gave instant relief. Placing this under the microscope, it showed itself as a collection of beautifully formed small, transparent and semi-transparent crystals 1 m.m. long by 0.80 m.m. wide.

Aug. 14, 1873. A new deposit of crystals has begun to form in the same place from which the above was removed. He was admitted this day into the hospital, for observation.

September 2, 1873. It has increased to about the size of the previous one, so I determined to remove it for chemical and microscopical examination.

On account of the very great sensitiveness of the eye, the patient was etherized. The crystal was delicately lifted off, after which I examined the diffused translucent infiltration in the cornea, and found it to be just under the epithelium, and would scale off in thin broad plates. I removed it all. By chemical examination it was found to contain phosphate and carbonate of lime. The larger and thicker deposit was found, under the microscope, to be, like the first one, a collection of small transparent and semi-transparent crystals, 1 m.m. long by 0.50 m.m. wide. While under the anæsthetic the fundus of the eye was examined with the ophthalmoscope. The cornea not being perfectly transparent, a perfectly defined view could not be obtained. However, two irregular light pinkish spots or plaques could be discovered in the choroid. There were no collections of pigment around them, or anywhere to be seen. They had not the appearance of inflammatory or of atrophic spots. Acid treatment was ordered. Sulphuric acid given internally, and the cornea touched daily with acetic acid diluted.

November 1, 1873. Under the acid treatment the eye has improved daily. The cornea is clearing. Being nearly transparent over the pupillary region.

January 1, 1874. Still improving; can open the eye freely and steadily. The light does not affect it.

March 1, 1874. Returned with the scratching feeling again. A new plate of crystals is forming in the lower line of the pupil.

April 7, 1874. Removed the plate, and placed it under the microscope for examination, when it was found to be the same as the previous ones, above described.

The only case I know of, of this nature, is mentioned by Bowman, in his lectures, of one in which "he removed from under the epithelium of the cornea a deposit of a salt of phosphate and carbonate of lime, which had formed in the course of several years without any inflammatory action."

Glaucoma Simplex, with a Diffused Brown Infiltration in the Cornea.—Absorbed after Iridectomy.

Some peculiar forms of cloudiness of the cornea have been noticed in cases of glaucoma, supposed to have been caused by the intraocular pressure. V. Graeffe, in his writings in the *Archiv für Ophthalmologie*, speaks of two different forms that may be seen in connection with secondary glaucoma. The first of which is a sclerous infiltration, which is not relieved by iridectomy. The second is a circumscribed rectangular ribbon-form opacity. Schiess-Gemuseus, in the *Klinische Monatsblätter für Augenheilkunde* x Jahrgang, p. 332, describes another form, "being a uniform cloudiness spreading over the whole of the cornea, without any change in the epithelium, as in diffused keratitis," which he observed in a case of glaucoma simplex.

As these cases are rare and of importance, I present the following case that came under my observation, as being still another new form of infiltration in the cornea in glaucoma which was entirely absorbed after the operation of iridectomy.

Mrs. A., aged forty-four years, consulted me October 11th, 1872, about a mist or cloud before the sight of the left eye, which had been troubling her since the recovery from an attack of variola the June previous. From outward appearances, at first glance, nothing could be seen to indicate any disease of the eye. There was no inflammation of the conjunctiva, no peri-corneal injection, no pain, nor had there been any during the attack of variola. The surface of the cornea had its natural shining appearance. The vision was found to be reduced to $\frac{20}{L}$. The tension of the ball was considerably increased, $T+1$. The fundus of the eye could not be defined with the ophthalmoscope, as there was a thin brownish tinted cloud in front. By minute examination this cloud was found to be a brown colored infiltration spreading in the centre of the cornea, while the periphery was still clear. By concentrated light from a convex lens

it could not be well distinguished over the pupil and naturally dark hazel iris, on account of its color being of the same tint. The right eye was found normal; vision $\frac{20}{22}$; no increase in tension.

November 4, 1873. Complained that the vision of the right eye was not so clear as it formerly was, and that she had suffered pain in both eyes at times since she last consulted me. The pupils of the eye were somewhat dilated. The tension had increased in either ball to $T+2$. There was no peri-corneal injection. With the ophthalmoscope the central artery of the retina in the right eye was plainly seen pulsating, but the optic nerve was not cupped. Vision reduced to $\frac{20}{XL}$. The field of vision somewhat reduced in the inner and upper side. The fundus of the left eye could not be distinguished. The brownish infiltration in the cornea somewhat denser, and could be seen more distinctly than when first examined. Vision $\frac{20}{LXX}$.

The increased tension, pulsating artery and decrease in the field of vision being marked symptoms of glaucomatous trouble, an early iridectomy was recommended, which I made the following day.

November 5. The patient being well etherized, a large iridectomy was made in the upper section on either eye. There was no hemorrhage into the anterior chambers. Both healed well in a short time.

November 15. Tension either eye normal. Vision right eye $\frac{20}{XXX}$. Left eye, the cloud still before it, but less dense.

December 1. The infiltration in the cornea of the left eye nearly all absorbed. Vision this eye $\frac{20}{L}$.

December 17. The cornea of the left eye perfectly clear. Vision $\frac{20}{XL}$. Right eye, vision $\frac{20}{XXX}$. The fields of vision normal. From the absorption taking place so readily and completely after the iridectomy, there is no doubt, in this case, that the corneal infiltration was caused in some way or another by the increased intraocular pressure.

